

CLAIMS

1. An image scanner comprising:

an elongate body;

5 a line sensor extending in the body longitudinally thereof for reading an original document as the body moves along the document;

a roller shaft rotatably supported in the body to extend longitudinally of the body;

10 at least one roller supported on the roller shaft for rotating therewith while rolling on the document;

a rotary encoder for detecting the rotation of said at least one roller for determining a scanning distance of the body, the rotary encoder including a rotary disk supported on a disc shaft; and

15 a drive transmission for connecting said at least one roller to the rotary encoder;

wherein the disc shaft extends in a direction crossing the roller shaft.

20

2. The image scanner according to claim 1, wherein the disc shaft extends perpendicularly to the roller shaft.

3. The image scanner according to claim 2, wherein the body
25 has an image reading surface for facing the document while the line sensor reads the document, the rotary disc being oriented parallel to the image reading surface.

4. The image scanner according to claim 3, further comprising a substrate accommodated in the body parallel to the image reading surface, the rotary encoder also including an optical detector mounted directly on the substrate adjacent to the rotary disc.

5. The image scanner according to claim 1, wherein the drive transmission comprises a first pulley mounted on the roller shaft, a second pulley mounted on the disc shaft, a belt wound around the first pulley and the second pulley, and a pair of intermediate pulleys for bending the belt.

6. The image scanner according to claim 5, wherein each of the first pulley and the second pulley has a circumferential engaging surface, the circumferential engaging surface of the first pulley differs diametrically from that of the second pulley.

7. The image scanner according to claim 5, wherein the drive transmission further comprises at least one additional pair of intermediate pulleys.

8. The image scanner according to claim 7, wherein said at least one additional pair of intermediate pulleys have a respective rotational axis extending parallel to the disc shaft.

9. The image scanner according to claim 7, wherein the roller shaft, the first pulley and the intermediate pulleys are located offset toward a longitudinal side of the body.

9. The image scanner according to claim 7, wherein the roller shaft, the first pulley and the intermediate pulleys are located offset toward a longitudinal side of the body.